REMARKS

Reconsideration and withdrawal of the rejections of this application and consideration and entry of this paper are respectfully requested in view of the herein remarks and accompanying information, which place the application in condition for allowance.

The Examiner is thanked for the many courtesies extended during the Interview of September 11, 2008.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 1, 3, 5, 8, 9, 28-33, 35, and 36 are currently under consideration. Claims 4, 6, 7, 10-27, and 37-43 are newly cancelled, and claims 1, 35, and 36 are amended, without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents.

Support for the amendment to recite "to stimulate cell-mediated immunity and anti-inflammatory responses in the nasal tissue" in claim 1 can be found, for example, in the paragraph bridging pages 10 and 11, on page 11, lines 4-8, and page 17, lines 18-19. Support for the amendment to recite chitin microparticles "that are insoluble in a pharmaceutically acceptable excipient or carrier" in claim 1 can be found, for instance, on page 14, lines 4-8, and on page 16, lines 3-4. The amendment to claim 35 is to perfect antecedent basis, and the amendment to claim 36 is to maintain proper claim dependency. No new matter is added.

Applicants respectfully assert that the amendment to claims 1, 35, and 36 does not necessitate a new search or examination, as the amendments are to clarify the invention as previously claimed.

It is submitted that the claims herewith are patentably distinct over the prior art, and these claims are in full compliance with the requirements of 35 U.S.C. §112. The amendments to the claims presented herein are not made for purposes of patentability within the meaning of 35 U.S.C. §§§§ 101, 102, 103 or 112. Rather, these amendments and additions are made simply to clarify the scope of protection to which Applicants are entitled.

II. THE REJECTION UNDER 35 U.S.C. § 103(a) IS OVERCOME

Claims 1-3, 5, 8, 9, 28-33, 35, and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata *et al.* (J Immunol 164: 1314-21, 2000) in view of Clinical Report (Pediatrics 100: 143-152, 1997) as evidenced by the specification of the present application, the Sigma Chitin powder product sheet, WO 97/20576, Kim *et al.* (J Dent Child 71: 126-130, 2004), and U.S. Patent No. 6,080,762 (the "'762 patent"). The rejection is respectfully traversed.

Establishing a *prima facie* case of obviousness requires that the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2143. The Examiner is also respectfully reminded that in order to ground an obviousness rejection, there must be some teaching which would have provided the necessary incentive or motivation for modifying the reference's teachings. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (BOPAI 1993). As stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Office Action does not make the modification obvious unless the prior art suggests the desirability of the modification." Also, the Examiner is respectfully reminded that for the Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). Furthermore, the Supreme Court has recently reaffirmed the factors set out in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18: "[T]he scope and content of the prior art are determined; differences between the prior art and the claims at issue are...ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___ (2007).

With this in mind, Applicants assert that the instant claims are distinguished and are not obvious in view of the cited references. Initially, Applicants draw attention to the instant claims, which are directed to a method of nasally treating an allergy in a patient comprising intranasally administering to the nasal mucosa of the patient a therapeutically effective amount of between

0.01 and 100 mg per kg of body weight of the patient of chitin microparticles in a chitin microparticle (CMP) preparation to stimulate cell-mediated immunity and anti-inflammatory responses in the nasal tissue, wherein the CMP preparation comprises chitin microparticles that are insoluble in a pharmaceutically acceptable excipient or carrier and have an average diameter of less than 10μm, and the allergy is seasonal respiratory allergies, allergies to aeroallergens, or asthma.

Applicants respectfully argue that Shibata *et al.* and Clinical Reports would not lead the skilled artisan to the present invention. Firstly, Shibata *et al.* relates to **oral** administration of chitin preparations which reduced serum levels of IgE and lung inflammation in mice challenged with a ragweed allergen. The oral route of delivery contrasts greatly with intranasal delivery, as oral delivery exposes the chitin to a highly concentrated acidic environment, which renders chitin soluble. Present specification, page 14, lines 6-8. Since the chitin was delivered orally to the stomach and its effects were manifested as reduced serum levels of IgE and lung inflammation, the skilled artisan would recognize that the effects of chitin administered orally are systemic.

Clinical Reports relates to alternative routes for drug delivery, and indicates that mucosal surfaces are "usually rich in blood supply" and provide "the means for rapid drug transport to the systemic circulation." Clinical Reports, page 145, left column. In particular, Clinical Reports discusses nasal mucosal administration in the context of spraying drugs onto the mucosa for rapid absorption "(1) by the olfactory neurons, (2) by the supporting cells and the surround capillary bed, and (3) into the cerebrospinal fluid." Clinical Reports, page 145, left column. Absorption of such drugs as described in Clinical Reports will occur if delivered drugs are soluble.

Hence, both Shibata *et al.* and Clinical Reports are in contrast to the claimed invention, which relates to intranasally administering CMP to stimulate cell-mediated immunity and anti-inflammatory responses in the nasal tissue. The CMP of the present invention are insoluble and delivered topically, **not** systemically, to improve function in the nasal passages. On the other hand, the combination of Shibata *et al.* and Clinical Reports yields a method that relies on the soluble form of CMP for systemic delivery. Thus, the combination of Shibata *et al.* and Clinical Reports does not teach or suggest a method to stimulate cell-mediated immunity and anti-inflammatory responses in the nasal tissue using a CMP preparation, as recited in the instant claims.

Moreover, the other cited references do not remedy this deficiency in the combination of Shibata *et al.* and Clinical Reports, as none of the references relate to the insoluble form of CMP or non-systemic delivery of CMP. As discussed in the Declaration under 37 C.F.R. § 1.132 filed February 5, 2008 (resubmitted herein as Exhibit A for Examiner's ease of reference), the secondary references relate to soluble drugs rather than insoluble drugs. For instance, Kim *et al.* relates to how intranasal delivery of midazolam, a water-soluble drug, can potentially result in rapid absorption, while the '762 patent relates to Raloxifene, which is also a soluble drug. Also, WO 97/20576 relates to intranasal delivery of chitosan, which is water-soluble. WO 97/20576, page 5, lines 21-24. One skilled in the art would therefore not apply the teachings of Kim *et al.*, the '762 patent, or WO 97/20576 to deliver chitin microparticles that are insoluble in a pharmaceutically acceptable excipient or carrier to stimulate cell-mediated immunity and anti-inflammatory responses in the nasal tissue.

Applicants also note that Shibata *et al.* promotes oral administration as a route of delivery and thereby teaches away from other routes, *e.g.*, intranasal administration. In particular, Shibata recites, "[t]he oral administration for therapeusis/prophylaxis should most likely be the route of choice for children who suffer from allergic diseases." Shibata *et al.*, page 1320, left column. Hence, the skilled artisan would understand that Shibata deters the combination with Clinical Reports, Kim *et al.*, WO 97/20576, and the '762 patent.

Furthermore, unlike in Shibata, Clinical Reports, or the secondary references, Applicants show that intranasal delivery of CMP can **clinically** improve lung function. Applicants refer to the Declaration under 37 C.F.R. § 1.132 filed February 5, 2008, which shows the efficacy of the methods of the claimed invention against allergies induced by grass, tree, and ragweed pollens, and animal dander, and against asthma. Moreover, the Declaration provides results from whole body plethysmography, which indicates respiratory function, rather than relying only on serum levels of antibodies and cytokines.

Hence, the skilled artist would not recognize that the combination of Shibata, Clinical Reports, and the cited secondary references renders the instant invention unpatentable. Accordingly, reconsideration and withdrawal of the Section 103 rejection are respectfully requested.

REQUEST FOR INTERVIEW

If any issue remains as an impediment to allowance, an interview with the Examiner and SPE are respectfully requested and the Examiner is additionally requested to contact the undersigned to arrange a mutually convenient time and manner for such an interview.

CONCLUSION

In view of the remarks and amendments herewith, the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date, and, the Examiner is invited to telephonically contact the undersigned to advance prosecution.

Respectfully submitted,

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